

Bently Nevada 330903&330904&330905&330910 Series Service Manual

330904-04-14-10-12-05

1. Description

Part Number: 330904-04-14-10-12-05

3. Product Information

Part Number: 330904-04-14-10-12-05

Model: 3300 NSv Proximity Probes

Manufacturer: Bently Nevada

Condition: New & Original in Factory Packing

Factory Warranty: 12 Months

Ordering Information

Model: 330904 = 3300 NSv Probe, M8X1 thread, with armor

Unthreaded Length Option: -04- 40 mm

Overall Case Length Option: -14=140 mm

Total Length Option: 10 = 1.0 meter (39 in)

Connector and Cable Type Option: 12 = Miniature coaxial ClickLoc
connector, FluidLoc cable

Agency Approval Option: -05= Multiple Approvals

Probe dc Resistance

Probe Length

(m) 1.0

Resistance from the Center

Conductor to the Outer

Conductor (RPROBE)

(ohms)

4.2 ± 0.5

The 3300 NSv probe and extension cable are mechanically and electrically compatible and interchangeable with Bently Nevada's previous 3300 RAM proximity probe and extension cable.

The NSv probe has increased chemical resistance compared to the 3300 RAM probe, which allows its use in many process compressor applications. The side-view characteristics of the 3300 NSv probe are also superior to those of the 3000-series 190 probe when gapping the 3300 NSv probe at the same distance from the probe target.

Extension cable

dc resistance

Center conductor: 0.220

Ω/m (0.067 Ω/ft)

Shield: 0.066 Ω/m (0.020

Ω/ft)

Extension cable

capacitance

69.9 pF/m (21.3 pF/ft)

typical

Field Wiring

0.2 to 1.5 mm² (16 to 24

AWG)[0.25 to 0.75 mm² (18

to 23 AWG) with ferrules].

Recommend using threeconductor shielded triad
cable. Maximum length of

305 meters (1,000 feet)

between the 3300 XL NSv

Proximito Sensor and the

monitor. See the frequency

response graphs Figure 16

and Figure 17 for signal

rolloff at high frequencies

when using longer field

wiring lengths.

Linear Range

1.5 mm (60 mils). Linear range begins at approximately 0.25 mm (10 mils) from target and is from 0.25 to 1.75 mm (10 to 70 mils) (approximately -1 to -13 Vdc).

Recommended Gap Setting 1.0 mm (40 mils)

Incremental Scale Factor (ISF) 7.87 V/mm (200 mV/mil) +12.5%/-20% including interchangeability error when measured in increments of 0.25 mm (10 mils) over the 1.5 mm (60 mil) linear range.

Deviation from best fit straight line (DSL) Less than ± 0.06 mm (± 2.3 mils).

Frequency Response 0 to 10 kHz: +0, -3 dB typical, with up to 305 meters (1000 feet) of field wiring.

Target Size (flat target) Minimum: 8.9 mm (0.35 in) diameter

Recommended minimum: 13 mm (0.5 in) diameter

Axial position measurements on shaft diameters smaller than 13 mm (0.5 in) will generally result in a change in scale factor. Reducing the gap between the probe and target will help limit the change in scale factor. See Figure 12 for additional information.

Probe Tip Material Polyphenylene sulfide (PPS).

Probe Case Material AISI 304 stainless steel (SST).

Probe Cable Specifications 75 Ω coaxial, fluoroethylene propylene (FEP) insulated probe cable in the following total probe lengths: 0.5, 1, 5, or 7 meters.

Recommended

torque Finger tight

Maximum torque 0.56 N•m (5 in•lb)

Minimum Bend

Radius (with or

without sst

armor)

25.4 mm (1.0 in)

Operating

Temperature

-52°C to +177°C (-62°F to

+351°F)

Storage

Temperature

-52°C to +177°C (-62°F to

+351°F)

Probe

Pressure

3300 NSv probes are

designed to seal differential

pressure between the probe

tip and case. The probe

sealing material consists of a

Viton O-ring. Probes are not

pressure tested prior to

shipment. Contact our

custom design department if

you require a test of the

pressure seal for your

application.

Connector-to-connector Torque

Probe Case Torque 3/8-24 or M10X1 probe cases – first three threads

Maximum Rated 22.6 N•m (200 in•lb)

Recommended 7.5 N•m (66 in•lb)

Connector-to-connector Torque

Probe Case Torque 3/8-24 or M10X1 probe cases

Maximum Rated 33.9 N•m (300 in•lb)

Recommended 11.3 N•m (100 in•lb)

Thread Engagement Limits

Probe Case Thread M10x1

Maximum Length of Thread

Engagement 15 mm

Temperature Schedule

Temperature

Classification

Ambient Temperature

(Probe Only)

For EPL Ga and Gc

T1 -55°C to +232°C

T2 -55°C to +177°C

T3 -55°C to +120°C

T4 -55°C to +80°C

T5 -55°C to +40°C

For EPL Dc

T280°C @ Ta -55°C to +232°C

T225°C @ Ta -55°C to +177°C

T170°C @ Ta -55°C to +120°C

T130°C @ Ta -55°C to +80°C

T105°C @ Ta -55°C to +100°C

T90°C @ Ta -55°C to +40°C

